SPECIFICATION AMENDMENTS

Page 2, lines 7-10, within the paragraph of these pages and line numbers, please enter the following amendments:

Microfluidic capillary array electrokinetic (CAEK) devices are provided employing individual units having four fold symmetry, each unit providing ~~two~~ four separate subunits permitting two independent determinations, where four subunits ~~of different units~~ share a single supply reservoir for a total of 8 determinations.

Page 3, lines 3-12, within the paragraph of these pages and line numbers, please enter the following amendments:

Each unit is characterized by having four-fold symmetry, where each unit may be divided further into ~~half-units~~ quarter-units or subunits having two single assay units to provide a total of 8-fold symmetry in relation to a common supply reservoir. ~~Each unit in each of the designs comprises four assay units.~~ Each unit has a central ~~waste~~ supply reservoir common to all of the assay units and at least one more waste reservoir shared with other units. The assay units are characterized by having a reagent source, which meets at an intersedction, usually a T, with a compound source, frequently a test or candidate compound or a labeled reagent, and connects to a delivery channel, where unused compound and reagent are directed to a common waste reservoir. The reagent source provides reagent to 8 single assay units, i.e. four ~~half-units~~ quarter-units, where the reagent is distributed to the 2 single assay units in each ~~half-unit~~ quarter-unit.

Page 3, line 27, please replace "waster" with "waste".

Page 4, lines 17 – 20, within the paragraph of these pages and line numbers, please enter the following amendments:

The disposition of the units is to have ~~half-units extending the full length along two edges and full-units between the half-units and at the other two edges. In this way, each column is bordered by half-units and the first and last lines have half-units, while the remaining lines have full-units~~ adjacent units aligned so as to share components of similar function. In this way, multiple units can be arranged in a device substrate that makes the most efficient use of space.

Page 5, line 11, please replace "24 units" with "12 units".

Page 5, line 14, please replace "mcirotiter" with "microtiter".

Page 7, line 14, please replace "juncture" with "junction".

Page 7, line 15, within the paragraph of these pages and line numbers, please enter the following amendment:

...an incubation region or channel 105 and connects...

Page 7, line 16, please replace the two instances of "juncture" with "junction".

Page 8, lines 4 – 13, within the paragraph of these pages and line numbers, please enter the following amendments:

Initially, electrodes in reagent reservoir 102, test compound and substrate reservoir 106 and waste reservoir 112 are activated to provide a field, which moves the enzyme, test compound and substrate into delivery channel 104 for incubation in incubation channel 105 ~~where the mixture moves toward T junction 110, so that the incubated mixtures arrives at the T junction. Further reaction may occur as the mixture is injected into the assay channel 114.~~ When the components reach T junction 110, the components mix to form the assay mixture and the enzyme reacts with the substrate in relation to the effect of the test compound. The amount of enzyme product produced is related to the activity of the test compound. The field may be maintained while the enzyme is moving toward cross-junction 116 and enzyme product is continuously being produced. Further reaction may occur as the mixture is injected into the assay channel 114.

Page 8, line 19 – page 9, line 4, within the paragraph of these pages and line numbers, please enter the following amendments:

In Fig. 1b is shown a device 150 having substrate 152. A pattern of units 154 ~~and half units 156~~ are shown, which is referred to as an 8-plex on a 96-assay format. The units 154 are

repeated across ~~Two~~ two rows ~~158 and 160 of half units 156 border the units 154 along two edges~~ and six columns. The units 154 are ~~four~~ eight units of 100 organized so as to share the maximum number of channels and reservoirs compatible with the purpose for which the device is used. In unit 154 there are ~~four~~ eight test compound and substrate reservoirs ~~106b1-4~~ 106a-h, associated with ~~individual~~ single assay units ~~100b1-4~~ 100, as shown in Fig. 1a. The reagent reservoir ~~102b~~ 102a supplies the reagent to eight assay units ~~100b~~ 100, where the eight assay units are ~~divided into~~ provided in four ~~half units~~ quarter-units 156~~, as part of four units 154~~. Each ~~half unit~~ quarter-unit 156, individually or as part of individual unit ~~156~~ 154, has a common buffer reservoir ~~118b~~118a-d. There are ~~two~~ six waste reservoirs ~~120b~~ 120a-f associated with each unit 154 and outside the design pattern for the unit, where the waste from the assay ~~channel 114b~~ channels 114a-h is directed. A single waste reservoir ~~112b~~ , e.g. 112a, for the delivery channel is central to the pattern of the ~~unit 154~~ subunit 156, receiving the waste from ~~all four~~ the two delivery channels. In this way for ~~four assay units 100b~~ each subunit 156, there are a total of three waste reservoirs, two reservoirs ~~120b~~ 120 ~~for the four assay channels 114b~~ and one waste reservoir ~~112b~~ 112 ~~for the four delivery channels 104b~~ available to be shared with an adjacent unit. ~~In addition, there is one reagent reservoir 102b for eight assay units 100b.~~ Detection sites are closely confined and symmetrical to permit a single detection unit, such as a CCD to be employed, or be able to move detection systems along a line or row for determinations.

Page 9, line 9, please replace "There are four test..." with "There are eight test...".

Page 9, line 12, please replace "assay channel 220" with "assay channel 216".

Page 10, line 4, within the paragraph of these pages and line numbers, please enter the following amendment:

...pass detector 330 upstream from...

Page 11, line 19, please replace "channel 324" with "channel 322".

Page 11, line 28 – page 12, line 10, within the paragraph of these pages and line numbers, please enter the following amendments:

In Fig. 3b, a unit consisting of ~~four~~ eight assay units depicted in Fig. 3a is shown. The unit 350b employs a reagent constituent comprising a reagent reactor 302b, particularly in the present illustration, a PCR reactor, a capture bead reservoir 308b, a buffer reservoir 312b, connected together through delivery channel 304b and side channels 306b and 310b. The delivery channel 304b feeds the amplified DNA from the PCR reactor 302b partially bound to the beads from bead reservoir 308b to eight different assay units ~~300b~~ 300, as shown in Fig. 3a ~~present as four half units 352b~~. Considering only one of the assay units in view of the symmetry of the system, labeled probe reservoir 314b feeds labeled probe through side channel 316b into delivery channel 304b to bind to DNA captured by the beads from bead reservoir 308b. The beads with the sample DNA and labeled probe, if the assay is positive, are captured by the bead trap 318b. The labeled probe is then released from the beads and transported to the delivery channel 304b and assay channel 322b cross-intersection 324b. The labeled probe is injected into the assay channel 322b by means of buffer from buffer reservoir 326b and the electrical field provided by electrodes in buffer reservoir 326b and waste reservoir 328b. A detector ~~330b~~ detects the passage of the labeled probe through the assay channel 322b.